

REMARKS

Summary of the Office Action

Claims 1-4, 6-7, 11-14, 16 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,658,713 to Yorikatsu et al. (hereinafter "*Yorikatsu*") in view of U.S. Patent No. 5,066,888 to Van Der Marel et al. (hereinafter "*Marel*") for the reasons presented at paragraph 2 of the Official Action.

Claims 5 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1 and in further in view of Japanese Patent Application No. 55-078436 (hereinafter "*Suzuki*") for the reasons presented at paragraph 5 of the Official Action.

Claims 8-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1 and in further in view of U.S. Patent No. 6,198,221 to Suyama et al. (hereinafter "*Suyama*") for the reasons presented at paragraph 6 of the Official Action.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1, in view of *Suzuki* and in further in view of *Suyama* for the reasons presented at paragraph 7 of the Official Action.

Claims 18 and 20-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1 and in further in view of U.S. Patent No. 3,761,614 to Bradley (hereinafter "*Bradley*") for the reasons presented at paragraph 8 of the Official Action.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1 and in further in view of *Bradley* as applied to claims 18,

20-22 and in further view of *Suzuki* for the reasons presented at paragraph 9 of the Official Action.

Claim 24 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* as applied to claim 1 and in further in view of *Suzuki* and in further view of *Bradley* for the reasons presented at paragraph 10 of the Official Action.

Summary of the Response to the Office Action

No claims are amended, cancelled or added in this response.

Claims 1-14, 16, 18-24, and 35 remain pending.

All Claims Define Allowable Subject Matter

Claims 1-4, 6-7, 11-14, 16, and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Yorikatsu* in view of *Marel* for the reasons presented at paragraph 2 of the Official Action. Specifically in the rejection, the Examiner admits that *Yorikatsu* fails to disclose an oxidizer comprising at least one vanadate with an alkali metal ion as a counter cation. However, the Examiner alleges that *Marel* discloses an oxidizer using compounds that include vanadium and cesium. The Examiner further alleges that it would have been obvious to use an oxidizer comprising at least one vanadate with an alkali metal ion in *Yorikatsu* because of the disclosure in *Marel*.

Applicants respectfully traverse the rejection. Claim 1 recites “an alkali metal generating agent comprising an oxidizer comprising at least one vanadate with an alkali metal ion as a counter cation.” As admitted by the Examiner, neither *Yorikatsu* nor *Marel* disclose at least one vanadate. Vanadate corresponds to an anion that includes vanadium and oxygen.

Yorikatsu discloses oxidizers comprising an alkali metal ion and chromate mixed with niobium. *See, e.g.*, col. 4, ll. 48-75. *Yorikatsu* provides no disclosure of an alkali metal ion and vanadate. *Marel* discloses prior art alkali metal generators comprising alkali chromate that released alkali metal through decomposition of the alkali chromate (*see, e.g.*, col. 1, ll. 23-27), like the generating agents disclosed in *Yorikatsu*. *Marel* further discloses that these prior art generators had deficiencies that could be cured by the invention of *Marel*, which uses a technique based on the alkali metal-release by means of diffusion that is clearly distinguished from the alkali metal-release by a decomposition reaction such as cesium chromate. *See, e.g.*, col. 1, ll. 61-63. Applicants' claimed embodiment uses an alkali metal vapor generation source based on a decomposition reaction in the same reaction as cesium chromate. *Marel* discloses vanadium as one material of the carrier metal and not as part of a vanadate. *See, e.g.*, col. 3, ll. 30-33. Further, *Marel* indicates vanadium is a material which is electrically conducting and does not react with cesium. *See, e.g.*, col. 3, ll. 28-30. At least because *Marel* discloses vanadium as a carrier metal for its ability not to react with cesium or silicon, *Marel* is free from a decomposition reaction, and does not provide any evidence that an alkali metal vanadate could be substituted for an alkali metal chromate as an oxidizer in *Yorikatsu*.

As described above, *Marel* discloses a wire of carrier metal that can substantially include vanadium. However, the method of diffusion for generating alkali metal vapor is clearly different from that of the claimed embodiment. The wire of carrier metal containing silicon is coated with metallic cesium and is subsequently heated. *See, e.g.*, col. 1, ll. 56-58. In *Marel*, silicon exists along grain boundaries of the carrier metal because silicon does not react with the carrier metal. By such a heating, cesium diffuses along the grain boundaries, and then CsSi_4 is formed by the joining of cesium diffused along the grain boundaries and silicon existing along

the grain boundaries. *Marel* uses such formed CsSi_4 as an alkali metal vapor source. The metallic cesium and the carrier metal do not form a compound. Instead, during heating the alkali metal vapor source of CsSi_4 , the cesium vapor released from the cesium-silicon compound CsSi_4 diffuses to the exterior via the grain boundaries. *See, e.g.*, col. 3, ll. 5-7. Therefore, *Marel* fails to disclose vanadate as an oxidizer, and thus no evidence of a vanadate is present in either of the references relied upon in the rejection.

Dependent claims 2-4, 6-7, 11-14, 16, and 35, which depend from claim 1, are also not obvious for at least reasons similar to those for claim 1. For at least these reasons the rejection should be withdrawn.

Claims 5, 8-10 and 18-24 are rejected under 35 U.S.C. § 103 rejections over different combinations of *Yorikatsu*, *Marel*, *Suzuki*, *Suyama*, and *Bradley*. Each of claims 5, 8-10, and 18-24 depend from claim 1, and none of the references cure the deficiencies described above regarding the rejection of claim 1. Therefore, claims 5, 8-10, and 18-24 are not obvious for at least reasons similar to those presented above for claim 1. Accordingly, Applicants respectfully request withdrawal of the rejections.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

DRINKER BIDDLE & REATH LLP

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By: Christopher P. Bruenjes
Christopher P. Bruenjes
Registration No. 62,941

Customer No. 055694
DRINKER BIDDLE & REATH LLP
1500 K Street, N.W., Suite 1100
Washington, DC 20005-1209
Tel.: (202) 842-8800
Fax: (202) 842-8465